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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,886

08/25/2006

Dong-hee Lee

DJKIM.GENO.PT2

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24943

7590

11/25/2009

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EXAMINER

PAGE, BRENT T

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,886	Applicant(s) LEE ET AL.	
	Examiner BRENT PAGE	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,5,6 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,5,6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Reply filed by Applicants on 08/25/2009 is hereby acknowledged. The cancellation of claims 1-2, 4, 7-8 and 10 without prejudice is hereby acknowledged. Claims 3, 5-6 and 9 remain pending and are examined herein on the merits.

Claim Rejections - 35 USC § 101

Applicant's arguments, see page 4 of response, filed 08/25/2009, with respect to being a non-statutory product of nature have been fully considered and are persuasive when taken together with the claim amendments. The rejection of claims 1-2 under 35 USC 101 has been withdrawn.

Claim Rejections - 35 USC § 102

Applicant's arguments, see page 4 of response, filed 08/25/2009, with respect to anticipation have been fully considered and are persuasive when taken together with the claim amendments. The rejection of claims 1-2 under 35 USC 102(b) has been withdrawn.

Claim Rejections - 35 USC § 103

Claims 3, 5-6 and 9 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Baucher et al (1999 Plant Molecular Biology 39:437-447) in view of Sibout et al (2003 Plant Physiology 132:848860), and further, in view of Haas et al (2002 GenBank Accession AY088448). The claims remain rejected for the reasons of record set forth in the office action mailed out on 03/19/2009 as well as the reasons set forth below.

Applicant's arguments filed 08/25/2009 have been fully considered but they are not persuasive.

Applicants urge that the phenotype of inhibiting plant growth using the antisense molecules to SEQ ID NO:1 was previously unknown in the art, and submitted evidence that not all CAD genes are required for normal growth, and therefore the phenotype of the instant claims could not have been reasonably expected (see pages 5-7 of response).

This is not persuasive because one only has to examine whether or not one would have been motivated to develop antisense constructs and transform plants with them from the prior art. The resultant phenotype is a natural property of down-regulating the gene and would naturally follow from such a transformation. As the submitted evidence shows, along with the cited art in the previous office action, because of their role in lignin biosynthesis, one of ordinary skill in the art would have been motivated to construct antisense constructs to any discovered cinnamyl dehydrogenase gene to investigate its role in lignin

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biosynthesis and determine whether or not growth in the plant could be altered.

This is particularly noted in the prior office action wherein Sibout et al stated "Characterization of a double Atcad-C/Atcad-D null mutant and other Atcad mutants, which is underway, will be very useful for further studies and better understanding of the role of each CAD gene" (see top of second column, page 857). Antisense constructs to GenBank Accession Q8L9G4 would necessarily encompass antisense constructs to SEQ ID NO:1 since they encode amino acid sequences with only a single amino acid difference. To obviate this rejection, it would have to be shown that antisense constructs gave an unexpected (in this case different) result than antisense constructs to GenBank Accession Q8L9G4, in order to show that unexpected results were garnered from the instant invention.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT PAGE whose telephone number is (571)272-5914. The examiner can normally be reached on Monday-Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571)-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brent T Page

/Anne Marie Grunberg/

Supervisory Patent Examiner, Art Unit 1638